IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Andrei Leonida
Serial No.:	10/814,019
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Group Art Unit:	1795
Examiner:	Crepeau, Jonathan
Confirmation No.:	5522
Title:	HARDWARE SYSTEM FOR HIGH PRESSURE ELECTROCHEMICAL CELL

APPELLANT'S REPLY BRIEF

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This is responsive to the Examiner's Answer mailed September 15, 2009.

ARGUMENT

A. The rejection of claims 1-9 and 22-26 under 35 U.S.C. §103 is improper.

The Examiner appears to acknowledge that an important object of WO '541 is to "provide improved seals for bi-polar or coolant plates, and a process for making such seals, which reduces the disadvantages associated with conventional sealing techniques." [WO '541, p. 3]. The Examiner contends that creating a gap between rib 25 and groove 30 of this fluid seal would not diminish this object because there is no requirement that the rib and groove be a "tight-fitting protrusion/volume structure" to create the seal. [Examiner's Answer, p. 8]. The Examiner then argues that the disclosure of WO '541 is broader than the disclosed embodiment relied upon by the Examiner. Hence, according to the Examiner, this broader disclosure suggests

that a groove wider than a rib, as taught by *Fujii et al.*, would not denigrate the seal of WO '541. Applicant respectfully disagrees.

WO '541 teaches a fluid seal for a fuel cell stack while *Fujii et al* teaches a plastic cover for an IC card. In contrast to *Fujii et al*, the fluid seal of WO '541 is improved by more surface contact between rib and groove. Decreasing surface contact would denigrate the fluid seal of WO '541. Accordingly, unlike *Fujii et al,* a "tight-fitting protrusion/volume structure" is an important feature of the seal of WO '541. Creating a gap between rib and groove, as taught by *Fujii et al.*, would defeat an object of WO '541, to provide an improved fluid tight seal.

Also, the Examiner notes WO '541 discloses other joining techniques, such as "heat bonding" and "hot bonding." However, these other joining techniques are taught to be used with the "tight-fitting protrusion/volume structure" relied upon by the Examiner for his rejection. There is no reason to believe that the fluid seal established by the "tight-fitting protrusion/volume structure" would likewise not be diminished by the creation of a gap between rib and groove. Accordingly, the combination of WO '541 with *Fujii et al.* is improper.

The Examiner also argues that reason exists to combine WO '541 with *Fujii et al* because the groove and rib design of *Fujii et al* would simplify manufacturing. The Examiner now explains that the combination of *Fujii et al.* with WO '541 would result in the elimination of excess glue, thereby making manufacturing simpler. However, this motivation does not cure the above deficiency of the combination, i.e. *Fujii et al* would destroy an objection of the invention of WO '541, an improved fluid seal. Because the combination of WO '541 and *Fujii et al.* is improper, Claim 1 and its dependents, Claims 2-9, and 22-26, stand in condition for allowance.

1. The rejection of Claims 22 and 23 is improper and these claims are separately allowable.

Originally, the Examiner rejected Claims 22 and 23 based on *Titterington et al.* The Examiner now contends that the combination of WO '541 and *Fujii et al.* meets these claim limitations, which the Examiner acknowledges are missing from *Titterington et al.* For the reasons stated above, however, the combination of WO '541 and *Fujii et al.* is improper, i.e. *Fujii et al.* will defeat an objection of the invention of WO '541. The Examiner also fails to identify where in either WO '541 or *Fujii et al.* the missing limitations of Claim 22 and 23 are taught. Instead, the Examiner misplaces reliance upon Figure 1 of *Titterington*, which the Examiner already acknowledges does not teach these limitations.

B. The rejection of claims 27-29 under 35 U.S.C. §103(a) is improper.

Claim 27 requires in pertinent part "said first protrusion, said second protrusion and said third protrusion define a tortuous path." The Examiner rejected this claim in view of Fig. 3d of WO '541 as modified by *Fujii, et al.* Critically, the combination of the references fails to teach a "tortuous path" as required by Claim 27. The Examiner originally suggested that WO '541 alone showed such a path in the z-direction but now contends that this path is shown by the combination of WO '541 with *Fujii et al.* According to the Examiner, creating a gap between rib and groove in WO'541, as taught by *Fujii et al* would create this path. Applicant disagrees.

First, the combination is improper because *Fujii et al.* would defeat an objection of the invention of WO '541, as explained above. Also, there is simply no disclosure of a tortuous path in either reference. Indeed, with reference to Fig. 3d of WO '541, once ribs 25 are disposed in grooves 30, there is no teaching of a "tortuous path," even in the z-direction and even with a gap between rib and groove as taught by *Fujii et al.* Further, Claim 27 requires at least three

protrusions defining this tortuous path and also requires that the "third protrusion" extend into the volume. The Examiner fails to explain how these limitations are met. Not only is the combination improper, it does not teach a "tortuous path" in any direction.

The Examiner also seeks to add new U.S. Pre-Grant Publication No. 2003/0179167 as a basis for a rejection. However, the Examiner fails to explain how this reference meets the limitations of Claim 27, either alone or in combination with any of the cited references. In particular, there is no showing that at least three protrusions define this tortuous path and also that the "third protrusion" extends into the claimed volume. There is also no explanation provided as to the reason for the combination. Therefore, Claim 27 and its dependents, Claim 28-29, stand in condition for allowance.

CONCLUSION

For the foregoing reasons, the final rejection of claims 1-9 and 22-29 is improper and should be withdrawn. All claims are in condition for allowance.

Respectfully submitted,

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